### Chief science officer ...

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Much focus also was placed on computing efforts, including the institutional computing project creating the turquoise network — a new, open collaborative network. Computer modeling of large-scale extragalactic structures and 3-D simulations of the asteroid impact that supposedly killed the dinosaurs 65 million years ago and still are relevant for tsunami research were mentioned. Bowles also cited the Lab's collaborative effort with Sandia National Laboratories to predict the course of Hurricane Francis, thus, acting as a resource for Florida power companies and authorities.

Bowles profiled several additional research highlights for 2004 — he plans on posting his full presentation online for viewing by Lab staff.

# **Year of Physics**



by Tom Bowles, chief science officer

arch 14 marked the 126th anniversary of the birth of Albert Einstein. In addition, 2005 has been declared "Year of Physics" by the American Physical Society, as it is the 100th

anniversary of five of Einstein's paper, including ones on special relativity, Brownian motion, the photoelectric effect and the relation of mass and energy. These have had a profound impact on society. Einstein's efforts also quite literally laid the basis for Los Alamos National Laboratory. His paper on special relativity with the famous equation E = mc2 that laid the basis for the release of nuclear energy is at the heart of nuclear weapons. And it was his letter to President [Franklin D.] Roosevelt about his concerns over German pursuit of nuclear fission that prompted the government to create the Manhattan Project.

In another sense, it is Einstein's spirit that is reflected in the character of the Laboratory. While Einstein's work laid the physical basis for nuclear weapons, he pursued a very wide range of research, which included cosmology, relativity and atomic physics. He was interested in virtually all aspects of the world around him. That interest is reflected in the broad science portfolio of the Laboratory. This breadth has served the nation well in our ability to respond to emerging needs.

The Laboratory's future depends on its ability to sustain the strength of the scientific underpinnings that support our service to the nation. This is what has allowed the Laboratory to excel in meeting its missions over its 62-year history. This basis is under stress for a variety of reasons. The director, University of California, senior management and staff are working together to relieve that stress. The NNSA is supporting [the Lab's] efforts to improve our performance, which in turn will benefit science.

I will be discussing our actions in future columns, but for now, let me just say that we are committed to working through the problems that the Laboratory faces. Ultimately, our goal is to make the Laboratory a place where Einstein would want to work.

Additionally, he stressed the importance of collaboration with the University of California (as it acts as a pipeline into the Lab for students) and listed the number of joint Lab/UC publications — there are more than 1,000 in the physics category alone. He also said the Lujan Center at LANSCE, where students can come to study, is another good example of this collaboration.

As chief science officer, Bowles maintained that his role is two-fold: 1) work to ensure the health of science at the Lab by providing a strong communication link between staff and management, and 2) oversee the quality of science at the Lab. He also serves as the point of contact with universities and science sponsors. Bowles is supported in his efforts by Deputy Chief Science Officer David Sharp and the Science Council.

### Addressing issues in science

In striving for the Lab's main science goal to sustain a healthy and viable science effort that will be able to address the long-term needs of the nation, Bowles identified a few issues. "We need to get real at defining our priorities," he said, adding, "we need to integrate our capabilities across the Lab much

more effectively." Getting the necessary resources, obtaining buy-in from sponsors, developing a plan and tracking it to completion are all part of the science roadmap that will be constructed over the next year with the help of technical directorates.

Bowles also listed safety and security at Los Alamos as a top priority mentioning that the Lab is the worst defense programs lab for Price-Anderson and Defense Nuclear Facilities Safety Board violations.

However, Bowles said compliant doesn't mean unquestioning. "Compliant means we should ensure safety, security and the ability to do our mission. But, you need to push back on things that do not make sense," said Bowles.

"[The Laboratory] can be fully safe, secure, and compliant and still maintain world-class science," he said. Bowles pointed out that it is to a large extent up to [Lab employees] to ensure that we do that.

"The quality of staff and of science and engineering at Los Alamos still is the highest level, but we still have a tremendous amount of work to do," said Bowles.

"We are absolutely committed to achieving success."



## License income distribution

What is license income?

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